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The hypothesis of this 3-year study was that contact with supportive influences (peer leaders, personal counseling interviews, group counseling sessions, and warm, sincere, interesting teachers) would improve the academic performance of underachieving secondary school students. The subjects, 440 seventh, ninth, and 10th graders from the Kalamazoo (Michigan) Public School system, were divided into four experimental and four control groups. Each experimental group received one form of the supportive treatment. The results of the pre- and post-testing indicated that the overall objectives of improved grades and reduced anxiety were not realized. However, the "peer leader" and the "group counseling" groups showed fewer absences and tardinesses and milder, less frequent disciplinary problems. These inconclusive findings reinforce the hypothesis that the underachieving syndrome is rooted in the home and environment and that it should be attended to in the upper elementary years. [Final page of document marginally reproducible.] (KG)

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# A DEMONSTRATION STUDY OF SIGNIFICANT OTHERS IN PRODUCING CHANGE IN SELF-CONCEPT AND ACHIEVEMENT IN KALAMAZOO SECONDARY SCHOOL UNDERACHIEVERS

A demonstration project supported by the funds supplied by the National Defense Act of 1958, Title V-A as authorized by P.L. 85-864 and the Michigan State Plan, Section 5.8.

Conducted jointly by the Kalamazoo Board of Education and the Title V-A Staff of the State Department of Education

for

The STATE BOARD OF EDUCATION

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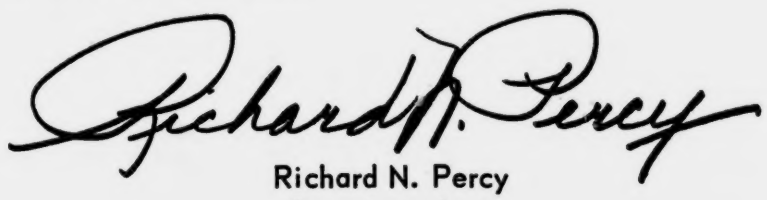
UD 009 146

## FOREWORD

The following report represents the effort of an untold number of hours spent by many people trying to do something about an important concern of all educators – the underachiever.

It is unfortunate that the desired results were not fully attained. However, the gains in basic human values and understandings which cannot be measured or treated statistically are the truly important gains for all the people – students and teachers alike – who participated in this project. These values we have gained and the ways of working with others will remain with us. Our interests are deeper and our perceptions are sharper because of this experience.



Richard N. Percy
Superintendent
Kalamazoo Public Schools

# A STUDY OF "SIGNIFICANT OTHERS" IN PRODUCING CHANGE IN SELF-CONCEPT AND ACHIEVEMENT IN KALAMAZOO SECONDARY SCHOOL UNDERACHIEVERS

## INTRODUCTION

Educators have directed more and more attention to the problems of underachievers in recent years. A number of factors have led to this emphasis: 1) Our manpower reserves of talent for scientific and professional occupations seem to have become depleted; 2) More and more unskilled and semiskilled work is being done by machines, thus emphasizing the necessity, vocationally, for each student to realize his intellectual potential; 3) Increased attention by the schools to students who have the ability to go on to college or to profit from other types of post-high school education; 4) The National Defense Education Act of 1958 which implemented "the national policy that opportunities be opened to the more able students and the point of view that the utilization of these opportunities rests, in large measure, upon the guidance function in education" (2).

## SCOPE OF THE PROBLEM

It is estimated that from 9 to 25 percent of the gifted students in many school systems are academic underachievers, and in some schools the incidence is higher (2). Gowan's research (16) indicated that in one California high school where 7 percent of the students were gifted, 42 percent of these were underachievers; in another high school where 2 percent of the students were gifted, 16 percent of these were underachievers; in an out-standing independent secondary school, 12 percent of the students were gifted, and 9 percent of these were underachievers.

A study of 4,900 "bright" high school students conducted in New York reports that 54 percent of the boys and 33 percent of the girls had scholastic averages, which halfway through high school, were already so low that their admission to college was in doubt. These students represented the high-ability populations of their classes in 39 academic high schools; and of the 4,900, only 20 percent were able to complete the first three terms of senior high school without faltering at some point and getting grades below 85 (20).

Of the high school students who rank in the top third in intellectual ability, 40 percent do not enter college, and of those who do enter, 60 percent do not finish college (11).

## COMPLEXITY OF THE PROBLEM

The etiology of academic underachievement, as revealed in existing research, involves a constellation of complex problems, both social and psychological in nature. The complexity of the underachievement problem is evidenced by the following studies reported in the professional literature.

In a recent research study conducted by Brookover and others (1), it was hypothesized that the self-concepts of high achievers among junior high school students with similar levels of intelligence, as measured by standard tests, vary significantly from self-concepts of low achievers; that student's self-concepts of ability in specific school subjects vary both from one subject to the other as well as from their general self-concepts of ability; that the expectations of "significant others"* as perceived by junior high school students are positively correlated with the students' self-concepts as learners. In general the results of the Brookover study support the hypothesis.

How early can we recognize underachievement in school? What are the etiological factors involved in underachievement?

> Academic underachievement is now regarded as a recognizable entity by the third, fourth, or fifth grade level, and is considered to be a "set" and relatively inaccessible pattern of behavior by the time the student enters high school. We do not know how early underachievement begins, but as we have indicated earlier, it would appear that in many cases its roots lie outside the schools, in early home and environmental influences (2).

In general, children's attitudes about themselves stem from the important and significant people around them – their peers, their parents, their teachers, and their counselors. Their concept of themselves, according to Wilson (17),

> as lovable, worthy of attention, capable of success, and secure in adult respect, is a reflection of the attitudes of the people with whom they closely interact. Unless the student has a great deal of self-initiated motivation and direction, he will need exposure to a source of motivation outside of himself for inspiration.

Blocksma's pioneer study (18) in 1941 is directly related to this investigation. Using high school students in the role of "significant others" with underachievers resulted in significantly improved academic

*See page 4 for definitions.

achievement for the underachieving group. The study involved 10 students who had failed one or more subjects the previous semester, but who were average or superior in intelligence. Three remedial sessions of 45 minutes each were held weekly. The student assistant helped the underachiever with such problems as study habits, reading, writing and teacher-student relationships. At the end of a semester of remedial work, not a single failure occurred in the underachieving group.

The research of Drews and Tehan (12) suggests the kinds of homes underachievers come from:

> Underachievers seem to come from families in which parents fail to see the child as a separate individual. These parents tend to act out upon him their needs, fears, and ambitions, as if he were an extension of themselves. Sometimes personal inadequacies may cause parents to regard the bright child as a threat and a competitor, someone to be 'cut down to size'. A common family pattern found in the homes of the underachiever seems to be the presence of a dominant and aggressive mother and a weak and ineffectual father.

If parents are overprotective, immature behavior is rewarded and independent thinking penalized. Excessive parental authoritarianism tends to thwart the natural development of independence, assertiveness, and spontaneity, particularly with the female child. On the other hand, excessive permissiveness inhibits the young person in learning to control the expression of his behavior derived from emotions and needs. This creates anxiety because it not only fails to define the boundaries beyond which a child's behavior is unacceptable, but also fails to define the boundaries within which he knows behavior is acceptable.

Many children enter school conditioned to failure. New pressures and demands for conformity are added to those previously internalized. The student who believes he may fail often has this doubt reinforced by criticism, failures, disciplinary actions, and peer group ostracism. Following this, we frequently see exhibited negativism, passivity, or over-aggressiveness (2, 6, 13, 14, 15). The foregoing studies suggest the extreme complexity of the underachiever problem.

## THEORETICAL FRAMEWORK

The theoretical position of this study closely parallels those of Rogers, Sullivan, Fromm, and Jersild, who, although differing somewhat in detail, are unanimously concerned about the need for a significant

person or persons with whom the student can identify and can draw upon for emotional support and love. These factors will help to give the student a better self-understanding.

## THE PROBLEM

As it eventually developed this demonstration project was a study of "significant others" in producing change in self-concept and achievement in Kalamazoo Secondary School Underachievers.

## DEFINITION OF TERMS

For purposes of clarification, terms which are frequently used in this report are defined.

1. **Behavior** For the purposes of this study behavior is defined as encompassing the following variables:
    1. Achievement, as measured by selected tests.
    2. Achievement, as measured by teachers' grades.
    3. Absences.
    4. Drop-outs.
    5. Frequency of disciplinary referrals.
    6. Severity of disciplinary offenses.
    7. Open-closed mindedness.
    8. Anxiety.
2. **Counseling** Is a process in which a person with special competencies assists other persons toward better understanding of themselves and their environment and encourages them to assume responsibility for making decisions which will lead to satisfactory adjustment or acceptable resolution of problems being considered.
3. **Group Counseling** Is a method of counseling students in groups in such a way that through exploration of interpersonal relationships a clearer self-definition becomes apparent and a more comfortable feeling about one's self occurs. This maybe accomplished through honest, frank exploration of feelings and a minimum of emphasis on previous success or achievement.

4. **Helping Relationship** As defined by Rogers (7), is a relationship in which at least one of the individuals has the intent of promoting the growth, development, maturity, and improved functioning for the other person involved.

5. **Ideal Self** Is the concept of self which an individual would most like to possess, upon which he places the highest value for himself. In all other respects it is defined in the same way as self-concept (see below). (7)

6. **Peer Leader** Is a student who exhibits leadership qualities in one or more of the following areas: academic, athletic, music, student government, drama, debate, forensics, and clubs. For the purposes of this study the peer leaders were selected by the counselors rather than by the underachievers involved. Counselors selected the peer leaders from their counseling groups, using the foregoing definition together with two guidelines: The peer leader is liked and respected by the majority of his peers; the peer leader has status among his peers, in part because of his leadership role.

7. **Self-concept** As defined by Rogers (8), self-concept is the organized, consistent conceptual gestalt composed of perceptions of the characteristics of the "I" or "me" and the perceptions of the relationships of the "I" or "me" to others and to various aspects of life, together with the values attached to these perceptions. It is a fluid and changing gestalt, a process.

8. **Significant other** Is a person who is supportive, interested, friendly one who views the underachiever as an individual worthy of dignity, respect, and love.

9. **Underachiever** Is an individual whose academic achievement, as evidenced by teachers' grades, or achievement test scores, is 35 percentile points or more below his intelligence test score.

10. **Warm, sincere, interested teacher** Is a teacher who in his human relationships, is accepting, understanding, empathic, respectful, interested in others, likes people, is trustworthy, dependable, consistent, non-threatening, and does not interfere with the freedom of others.

## OBJECTIVES

In the original proposal, eight hypotheses were considered by the steering committee as appropriate for study under the general heading of underachievement:

1. Underachieving students who are encouraged to establish a warm personal relationship with a leader in the community will achieve at a normal rate.

2. Underachieving students whose parents have positive attitudes toward the child, the school, and achievement, will achieve at a normal rate.

3. Underachieving students who are exposed to a series of counseling interviews in which the objective is to reach self-understanding and self-acceptance in terms of aptitudes, abilities, characteristics, interest, and attitudes will achieve at normal rate.

4. Underachieving students who are exposed to a number of group guidance situations in which the objective is to reach self-understanding and self-acceptance through exploration of inter-personal relationships will achieve at a normal rate.

5. Underachieving students who are placed with warm, sincere, interested teachers will achieve at a normal rate.

6. Underachieving students for whom the curriculum is modified so that classes may be taken in which immediate and continuing success and rewards can be obtained will achieve at a normal rate.

7. The transient underachiever will be less successful academically than the non-transient underachiever.

8. The underachiever exposed to a number of experimental effects will achieve more than underachievers exposed to only one or none.

In the spring of 1962, the steering committee decided to test four of the hypotheses. The investigation of the remaining hypotheses was not implemented because of limited personnel and time. Further, hypothesis number one, upon the recommendation of Dr. Douglas Blocksma, was changed from a community leader to a peer-leader.

## RESEARCH HYPOTHESES

The study then was designed to investigate the following four hypotheses:

1. **There is a difference in behavior between the underachieving students who are paired with peer leaders and the behavior of underachieving students who are not formally paired with peer leaders.**

2. **There is a difference in behavior between the underachieving students who are exposed to a series of personal counseling interviews**

and the behavior of underachieving students who are not exposed to a series of personal counseling interviews.

3. There is a difference in behavior between the underachieving students who are exposed to a number of group counseling sessions and the behavior of underachieving students who are not exposed to a number of group counseling sessions.

4. There is a difference in behavior between the underachieving students who are placed with warm, sincere, interested teachers and the behavior of underachieving students who are placed with routinely assigned teachers.

## ASSUMPTIONS

The basic assumptions underlying this research were:

1. Underachieving behavior, like most other kinds of human behavior, is amenable to change.

2. There is no significant difference, prior to treatment, in the selected variable to be subjected to statistical analysis.

3. A significant proportion of secondary school students are not achieving commensurate with their capacities.

4. Knowledge of the nature of underachievement and of the procedures most effective in its prevention or cure is still in a relatively unsophisticated state.

5. Uncontrolled variables, i.e., age, sex, motivation for learning, socioeconomic status, understanding, skill, and willingness to accept help of the "warm teachers" and peer leaders, will tend to distribute their effects randomly throughout the experimental and control groups.

## PERSONNEL INVOLVED

The personnel who were involved in the project at the local level fell into three categories:

1. Those people who were regularly employed by the Kalamazoo Public Schools at some time during the study.

2. Those people who were continuing consultants for the duration of the study.

3. Those people who were called in at some time during the study to give suggestions or to perform a specific service for the study.

## DESIGN AND METHODOLOGY

The design and methods used in this study are described under six main headings: 1) Population; 2) Sample; 3) Treatment; 4) Methodology; 5) Procedures for collecting data; 6) Procedures for analyzing the data.

### THE POPULATION

The 440 students judged underachievers in June 1962 were selected from the seventh, ninth, and tenth grades of six junior high schools and two senior high schools of the Kalamazoo Public School System. The eighth grade was not included in the study because of the uncontrollable variable of changing from junior to senior high school during the course of the study.

### THE SAMPLE

These 440 students were randomly assigned to the four control and four experimental groups. The assignment of students in each treatment group was effected in June, 1962. It should be emphasized that the entire population of 440 underachievers was used in this study, a rarity in research projects of this nature.

Table One summarizes the number of students in each treatment group when the experiment began in the fall of 1962.

**TABLE 1**

**Number of Students in Treatment Groups at the Beginning of the Experiment**

N = 315

| | Experimental | Control |
|---|---|---|
| Peer Leader | 32 | 32 |
| Individual Counseling | 48 | 48 |
| Group Counseling | 48 | 48 |
| Warm Teachers | 28 | 31 |

It is to be noted that the individual counseling and group counseling samples each contained 48 students. It was felt that eight students was an appropriate number for the group counseling sessions. The same total number of students (48) was used for the individual counseling hypothesis for ease in statistical comparison.

Previous mention was made that the parental hypothesis and modified curriculum hypothesis were dropped from the study. This fact, together with drop-outs and attritions, accounts for the discrepancy between the original sample of 440 and the N of 315 at the onset of treatment.

## TREATMENT

The four types of treatment used in this study were an outgrowth of possible ways of helping underachievers as described in the professional literature. The following types of treatment were used in the study:

| | |
|---|---|
| Peer Leader | Group Counseling |
| Individual Counseling | "Warm Teacher" |

Each of these treatments involved the use of the helping relationship and the concept of the significant other person.

To insure relative consistency in the use of the helping relationship, three meetings were held in each of the schools for the "warm teachers" and three meetings for the peer leaders. How Rogers' helping relationship could be utilized by the teachers and peer leaders in working with underachievers was discussed and explored until all understood. Group counselors met seven times with consultants to develop techniques for group counseling with underachievers as well as to utilize Rogers' techniques for the helping relationship. The individual counselors met three times with consultants to better understand the problems of counseling the underachiever and to also understand the implications of the utilization of Rogers' helping relationship.

## THE METHODOLOGY

The instruments used in this study, both pre and post tests, are listed in Table Two.

**TABLE 2**
**Summary of Testing Schedule**

| | Grade | Date Administered |
|---|---|---|
| Pre-Test: | | |
| C.T.M.M. | 7, 9, 10 | April, May 1962 |
| California Achievement | | |
| Post-Test: | | |
| California Achievement | 9 | April, May 1964 |
| I.T.E.D. | 11, 12 | |
| Rokeach | 9, 11, 12 | |
| Taylor Manifest Anxiety Scale | 9, 11, 12 | |

The California Test of Mental Maturity was administered initially for the purpose of appraising mental development and mental capacity. The California Achievement Test was used for the purpose of assessing school achievement. In addition to these two tests, teacher's grades were also used at the onset of the project to identify underachievers.

Four tests were employed at the conclusion of the project. The California Achievement Test was used to compare experimental and control groups on school achievement at the ninth grade level. The Iowa Test of Educational Development was used for the same purpose in grades eleven and twelve.

The Rokeach Open-Closed Minded Scale was used to determine whether the experimental treatments made a difference in the students' belief structures, whether the concepts of himself and others changed during the process.

The Taylor Manifest Anxiety Scale was used to explore varying levels of anxiety after treatment. Research indicates clearly that anxiety closes the individual off from creativity, learning, novelty, spontaneity, etc. This study hypothesizes reduction of anxiety level in the students after treatment.

## PROCEDURES FOR COLLECTING THE DATA

In April and May, 1962, all seventh, eighth, ninth, and tenth graders in the Kalamazoo Public School System were administered the **CTMM** and the **California Achievement Test.** With the exception of Central High School, all testing was done over the public address system by a qualified graduate assistant from Western Michigan University. At Central High School the testing was conducted in the school cafeteria by the graduate assistant mentioned above. The test results and marks were placed on 4" x 6" cards for each student in grades 7, 9, and 10. (The eighth graders were dropped from the study, as indicated previously.) The ability score was the CTMM verbal score, which was converted to a standard score. The achievement scores for reading, mathematics, and language were averaged and converted to standard scores. Teachers' grades for English, mathematics, and social studies (for the 1961-62 school year) were averaged and converted to standard scores.

Students were determined to be underachievers if their teachers' grades or achievement test scores were 35 percentile points or more below their intelligence test scores.

For the purpose of recording the frequency of disciplinary referrals and the severity of disciplinary offenses, the decision was made to use a disciplinary check list devised by Davis (19). The recording of the offenses was done by the assistant principals, who are the chief disciplinary officers in the Kalamazoo Public School System. The 12 disciplinary items in this check list are ranked according to severity of offense: property damage, disobedience, disrespect, profanity and obscenity, theft, cheating, ignoring health and safety rules, fighting, disturbance, nonconformity, misrepresentation, and gambling.

The post-testing was done in April and May, 1964. The achievement scores for language, mathematics, and social studies were converted to standard scores. Teachers' marks for language, mathematics, and social studies were collected, a grade point average was computed. For the purposes of this study, the grade point average was based on the following scale: A = 4, B = 3, C = 2, D = 1, F = 0.

At the close of the school year, absences, tardinesses, frequency of disciplinary referrals, severity of disciplinary offenses, and drop-outs were obtained from the assistant principals.

## PROCEDURES FOR ANALYZING THE DATA

The decision was made to use nonparametric tests in analyzing the data, rather than parametric tests, particularly the "t" test. The rational for this decision was based upon the fact that the assumptions, conditions, and measurement requirements underlying the "t" test are not met with the present study. The assumption which is not met, according to Siegel (9), is as follows:

> "The variables involved must have been measured in at least an interval scale so that it is possible to use the operations of arithmetic on the scores."

The achievement test scores, the I.Q. scores, Taylor Manifest Anxiety Scale, Rokeach Open-Closed Minded Scale, the Teachers' grades, are, at best, ordinal scales (3, 9).

According to Siegel, the Mann-Whitney U Test is the most powerful nonparametric test comparable to the "t" test. The U Test can be used when at least ordinal measurement is present or when the "t" test's assumptions are not met.

The .05 level of significance was selected for accepting or rejecting the null hypothesis.

# RESULTS AND CONCLUSIONS

## RESULTS OF THE STUDY

In all comparisions of data this study made use of the null hypothesis. This method makes use of the statistical method of stating a problem so that if there is, in fact, a real or significant difference between two dimensions or areas being compared the hypothesis will be rejected. This method of making a comparison is based on the fact that it is easier to prove statistically a statement to be false than it is to prove that a statement is true. In effect, it is a way of saying we can prove that this statement or hypothesis is false, but there is no way to prove that the opposite is true. So the research worker if forced to use the null hypothesis and to reject it to show that, in fact, a real difference in variables exists.

Because of this, when a statement in any of the following tables says "accept" this must be interpreted as no significant difference between the two variables exists and we have to assume that that particular treatment had no positive effect. On the other hand, when a statement is followed by "reject" it must be interpreted as meaning that there exists a significant difference between the two elements being considered and that for the most part in this study the difference will favor the experimental treatment.

For ease in handling the statistical data four tables were formulated, one for each of the four treatment effects.

The null hypothesis for the nine selected variables of the peer leader treatment effect was:

> $H_{o1}$ There is no difference in behavior between the underachieving students who are paired with peer leaders and the behavior of underachieving students who are not formally paired with peer leaders.

Table Three summarizes the statistical test results on the selected variables of peer leader treatment effects. As evidenced in Table Three the only variables indicating a significant difference are those of absences, frequency of disciplinary referrals, and severity of disciplinary offences. The null hypothesis is rejected in each case. An inspection of the raw data indicated that the significant difference in each case favors the experimental group.

This is to say that when the peer leader worked with the underachiever the underachiever was going to show a significant difference in

his attendance. He will be in school on a much more regular basis. The underachiever will not be in as much trouble with teachers or the principal and when he is in trouble the trouble will be of a less serious nature because of the fact that he is working with the peer leader.

It should be noted that while the null hypothesis is accepted at the .05 level of confidence with respect to the **Rokeach Open-Closed Minded Scale,** There is a significant difference at the .06 level of confidence and the null hypothesis would be rejected at the .06 level. The direction of the difference favored the experimental group.

**TABLE 3**

Summary of Statistical Test Results on Selected Variables of Peer Leader Treatment Effects

| VARIABLE | N | | STATISTICAL TEST | CRITICAL VALUE | ALPHA = .05 |
|---|---|---|---|---|---|
| | E | C | | | |
| Achievement (Tests) | | | | | |
| Social Studies | 18 | 16 | Mann-Whitney U | u (136.5) | Accept |
| English | 18 | 16 | Mann-Whitney U | u (123.0) | Accept |
| Mathematics | 18 | 17 | Mann-Whitney U | u (134.0) | Accept |
| Teachers' Grades | 22 | 20 | Mann-Whitney U | z (.176) | Accept |
| Absences | 22 | 20 | Binomial | z (.01) | Reject |
| Tardinesses | 22 | 20 | Binomial | z (.339) | Accept |
| Drop-Outs | 22 | 20 | Binomial | z (.316) | Accept |
| Frequency of Disciplinary Referrals | 22 | 20 | Binomial | z (.003) | Reject |
| Severity of Disciplinary Offenses | 22 | 20 | Kolmogorov-Smirnov | $x^2$ (16.06) | Reject |
| Rokeach | 18 | 18 | Mann-Whitney U | u (113) | Accept |
| Taylor | 17 | 17 | Mann-Whitney U | u (137.5) | Accept |

## TABLE 4

Summary of Statistical Test Results on Selected Variables of Individual Counseling Treatment Effects

| VARIABLE | N | | STATISTICAL TEST | CRITICAL VALUE | ALPHA = .05 |
|---|---|---|---|---|---|
| | E | C | | | |
| Achievement (Tests) | | | | | |
| Social Studies | 30 | 29 | Mann-Whitney U | U (1.53) | Accept |
| English | 30 | 29 | Mann-Whitney U | U (.682) | Accept |
| Mathematics | 30 | 29 | Mann-Whitney U | U (.712) | Accept |
| Teachers' Grades | 37 | 34 | Mann-Whitney U | U (.805) | Accept |
| Absences | 30 | 29 | Binomial | z (.348) | Accept |
| Tardinesses | 30 | 29 | Binomial | z (.79) | Accept |
| Drop-Outs | 30 | 29 | Binomial | z (.602) | Accept |
| Frequency of Disciplinary Referrals | 30 | 29 | Binomial | z (.171) | Accept |
| Severity of Disciplinary Offenses | 30 | 29 | Kolmogorov-Smirnov | $x^2$ (1.06) | Accept |
| Rokeach | 32 | 28 | Mann-Whitney U | U (.047) | Accept |
| Taylor | 32 | 28 | Mann-Whitney U | U (.229) | Accept |

The null hypothesis tested for the nine selected variables of the individual counseling treatment effect was:

$Ho_2$ There is no difference in behavior between the underachieving students who are exposed to a series of personal counseling interviews and the behavior of underachieving students who are not exposed to a series of personal counseling interviews.

Table Four summarizes the statistical test results on the nine variables of individual counseling treatment effects. Since there were no statistically significant differences, the null hypothesis was accepted in each case.

This is to say that while there were some differences, the differences were not great enough to be able to say the experimental treatment was better.

## TABLE 5

Summary of Statistical Test Results on Selected Variables of Group Counseling Treatment Effects

| VARIABLE | N | | STATISTICAL TEST | CRITICAL VALUE | ALPHA = .05 |
|---|---|---|---|---|---|
| | E | C | | | |
| Achievement (Tests) | | | | | |
| Social Studies | 20 | 14 | Mann-Whitney U | u (96.5) | Accept |
| English | 20 | 15 | Mann-Whitney U | u (139) | Accept |
| Mathematics | 20 | 15 | Mann-Whitney U | u (147) | Accept |
| Teachers' Grades | 19 | 15 | Mann-Whitney U | u (99.5) | Accept |
| Absences | 20 | 15 | Binomial | z (.411) | Accept |
| Tardinesses | 20 | 15 | Binomial | z (3.30) | Reject |
| Drop-Outs[1] | | | | | |
| Frequency of Disciplinary Referrals | 25 | 19 | Binomial | z (.227) | Accept |
| Severity of Disciplinary Offenses | 25 | 19 | Kologorov-Smirnov | $x^2$ (16.45) | Reject |
| Rokeach | 19 | 15 | Mann-Whitney U | u (100) | Accept |
| Taylor[2] | 12 | 9 | Mann-Whitney U | u (45) | Accept |

[1] No drop-outs.

[2] Test not available on assigned testing day at one of the junior high schools.

The null hypothesis tested for the nine selected variables of the group counseling treatment effect was:

$H_{o3}$ There is no difference in behavior between the under-achieving students who are exposed to a number of group counseling sessions and the behavior of under-achieving students who are not exposed to a number of group counseling sessions.

Table Five reflects that the null hypothesis on severity of disciplinary offences and tardinesses was rejected. The differences favored the experimental group. In other words, the students who had the benefit of the group counseling treatment were not in as severe trouble as those who were in the control group. Also the students who were in the group counseling treatment were significantly less tardy than the others who were not in the experimental group. The null hypothesis was accepted in all other variables.

## TABLE 6

Summary of Statistical Test Results on Selected Variables of Warm Teacher Treatment Effects

| VARIABLE | N | | STATISTICAL TEST | CRITICAL VALUE | ALPHA = .05 |
|---|---|---|---|---|---|
| | E | C | | | |
| Achievement (Tests) | | | | | |
| Social Studies | 18 | 20 | Mann-Whitney U | u (.190) | Accept |
| English | 18 | 20 | Mann-Whitney U | u (.205) | Accept |
| Mathematics | 18 | 20 | Mann-Whitney U | u (.307) | Accept |
| Teachers' Grades | 21 | 24 | Mann-Whitney U | u (.603) | Accept |
| Absences | 18 | 20 | Binomial | z (1.45) | Accept |
| Tardinesses | 18 | 20 | Binomial | z (1.85) | Reject |
| Drop-Outs[1] | 18 | 20 | Binomial | z (.424) | Accept |
| Frequency of Disciplinary Referrals | 18 | 20 | Binomial | z (.236) | Accept |
| Severity of Disciplinary Offenses | 18 | 20 | Kolmogorov-Smirnov | $x^2$ (.987) | Accept |
| Rokeach | 19 | 20 | Mann-Whitney U | u (1.11) | Accept |
| Taylor | 19 | 20 | Mann-Whitney U | u (1.06) | Accept |

[1] Binomial test was computed on "stay-ins" because of the N of the drop-outs was two and the Binomial Tables begin at five.

The null hypothesis tested for the nine selected variables of the warm teacher treatment effect was:

$Ho_4$ There is no difference in behavior between the underchieving students who are placed with warm, sincere, interested teachers and the behavior of underachieving students who are placed with routinely assigned teachers.

As evidenced in Table Six, the null hypothesis was accepted for all variables except tardinesses. Here there was a significant difference in favor of the control group.

There seemed to have been a reaction to the extra interest which was taken by the "warm teacher" perhaps causing the student to feel that it was permissable to be tardy, or perhaps the students resented the extra time spent on them and wanted to avoid school.

## DISCUSSION OF RESULTS

This study was designed to explore the effectiveness of two parallel approaches in helping secondary school underachievers. The use of a significant other person was based upon the theory that an underachiever needs to identify with a significant other person, one who is supportive, interested, friendly, one who views him as an individual worthy of dignity, respect, and love. The use of Rogers' helping relationship principles by the significant others was viewed as a method to help the underachiever solve his emotional and personality problems and to help him modify his distorted perceptions of school, parents, and adult authority figures.

Statistically, most of the objectives of this study were not realized. The experimental groups did not achieve significantly more than the control groups with respect to teachers' grades, nor did they become more open-minded or less anxious. Significant differences were noted with peer leader group on the variables of absences, frequency of disciplinary referrals, and severity of disciplinary offenses. The group counseling experimental group had fewer tardinesses and fewer severe type disciplinary offenses. Conversely, the "warm teacher" control group had fewer tardinesses.

Conclusions based upon the results of this exploratory investigation with respect to the effectiveness of these two approaches are tentative and require further experimental study.

Why were the objectives of this study not achieved? Perhaps a discussion of some of the factors that may have influenced the results is in order.

1. Because the dynamics of underachievement are multiple in nature and vary from underachiever to underachiever, it logically follows that a given treatment might not be applicable for a given underachiever. To effect permanent changes with underachievers it would then follow that all of the underachievers should be exposed to all of the treatment effects.

2. Many research studies on underachievement have emphasized the importance of home backgrounds, parental problems, and emotional immaturity. While the present study attempted to help underachievers by introducing a significant other person who utilized Rogers' helping relationship principles, it is recognized that the environmental influences may be so potent as to preclude any permanent change based upon an hour or two of help per week.

3. Perhaps research by Drews which was noted in the introduction bears more significance than was originally supposed.

> Academic underachievement is now regarded as a recognizable entity by the third, fourth, or fifth grade level, and is considered to be a "set" and relatively inaccessible pattern of behavior by the time the student enters high school. We do not know how early underachievement begins, but as we have indicated earlier, it would appear that in many cases its roots lie outside the schools, in early home and environmental influences (2).

It would then seem that a project of this nature may be fighting against great odds to try to overcome this "set". It might be desirable to work with the student during a period when he is more amenable to change.

4. Statistical treatment of group data tends to have a cancelling effect. Many in each group do make significant gains academically, while others regress, while still others remain unaffected. This regression to the mean results in statistics which are not significant but obscure the positive achievement noted when individuals are studied. To put this in another way, it is important not to become discouraged when results of this kind show little or no difference, but rather the person doing the research should see that these treatments do effect changes on many of the students. It is important to keep trying to do something about the particular individual with whom you are working. There will be differences which may not show up immediately or statistically, but the individual will be helped.

5. Although we constantly seek a panacea for the ills of underachievement, perhaps there is neither universal cause or cure. It may well be that the answer to the underachievement syndrome is different for each underachieving student. Since each underachiever has a unique personality and a unique perceptual world – with no two alike – perhaps the answer lies here. What purpose does academic success or failure have for him? How is it used in his self-structure (21)?

6. It is the nature of the counseling relationship to vary in its effectiveness from day to day, session to session, student to student, and from counselor to counselor. Therefore, the sum total of these variances tend to have a cancelling effect when subjected to a statistical analysis.

## CONCLUSIONS

1. The entire staff – teachers, administrators, and counselors – are sensitively aware of the seriousness of the underachievement problem in Kalamazoo. The present investigation may well serve as a springboard for further research into underachievement.

2. Many teachers, counselors and peer leaders who actively worked in the experiment, report that many underachievers are presently better adjusted socially, less of a disciplinary problem in the classroom, and are achieving more nearly commensurate with their aptitude.

3. Both counselors and teachers indicate that they will, on an informal, individual basis, continue the various treatment techniques utilized in this experiment.

Based upon their intimate relationship with this study, the writers wish to go beyond the data presented, and present some recommendations appropriate to other schools interested in a study of this nature:

1. The time alloted to the supervision of this project should be at least one-half time for the coordinator. Secretarial time should be commensurate.

2. Sufficient time should be given prior to the implementation of the research study for the training and orientation of the people who will participate. Time should be provided during the course of the study for regularly planned orientation sessions.

3. Counselors should be given released time from their regularly assigned duties, the amount to be determined by the number of experimental students with whom they are working.

4. Underachievement is a complex phenomenon and it is not ordinarily modified in a short period of time. For a school system to make permanent changes a great deal of personnel and time must be invested in the underachiever. For example, in the case of individual counseling, it would seem that a minimum of three hours a week would be necessary to make changes in the individual. To try to make changes using group counseling techniques, at least two sessions per week would be necessary to get at the deep seated dynamics causing the underachievement.

## BIBLIOGRAPHY


1. Brookover, Wilbur B. et al. **Self-Concept of Ability and School Achievement.** East Lansing, Mich.: Office of Research and Publications, Michigan State University, 1962.
2. Drews, Elizabeth M. (Ed.). **Guidance for the Academically Talented Student.** Washington, D.C.: National Education Association, 1961.
3. Edwards, Allen L. **Experimental Design in Psychological Research.** New York: Rinehart & Co., Inc., 1960.
4. Fromm, Erick. **The Sane Society.** New York: Rinehart, 1955.
5. Jersild, Arthur T., and Lazar, Eve. **The Meaning of Psychotherapy in the Teacher's Life and Work.** New York: Columbia University, Bureau of Publication, 1962.
6. Miller, Leonard M. (Ed.). **Guidance for the Underachiever with Superior Ability.** Washington, D.C.: Superintendent of Documents, Government Printing Office, 1961. (U.S. Department of Health, Education, and Welfare.)
7. Rogers, Carl. **On Becoming a Person.** Boston: Houghton Mifflin Co., 1961.
8. , "A Theory of Therapy, Personality, and Interpersonal Relationships, as Developed in the Client-Centered Framework," in **Psychology: A Study of A Science, Vol. III,** Sigmund Koch, Editor. New York: McGraw-Hill Book Co., Inc., 1959, p. 200.
9. Siegel, Sidney. **Nonparametric Statistics for the Behavioral Sciences.** New York: McGraw-Hill Book Co., Inc., 1956.
10. Sullivan, Harry Stock. **The Interpersonal Theory of Psychiatry.** New York: Norton, 1953.
11. Wolfle, Dael L. **America's Resources of Specialized Talent.** New York: Harper and Brothers, 1954.
12. Drews, Elizabeth M., and Tehan, J. E. "Parental Attitudes and Academic Achievement," **Journal of Clinical Psychology,** Vol. 13, October, 1957, PP. 328-332.

13. Fliegler, Louis A. "Understanding the Underachieving Gifted Child," **Psychological Reports**, Vol. 3, December, 1957, pp. 533-536.

14. Gowan, J. C. "Dynamics of Underachievement of Gifted Students," **Exceptional Children**, Vol. 24, 1957, pp. 98-107.

15. , "Factors of Underachievement in High School and College" Journal of Counseling Psychology, Vol. 7, June, 1960, pp. 91-95.

16. , "The Underachieving Child- A Problem for Everyone," **Exceptional Children**, Vol. 21, 1955, pp. 247-249.

17. Wilson, Frank T. "Working with the Motives of Gifted Children," **Elementary School Journal**, Vol. 57, February, 1957, pp. 247-252.

18. Blocksma, Douglas, "Use of Student Assistant in the High School Guidance Program," Mimeographed paper, January 16, 1942.

19. Davis, Donald A. "An Investigation of Drop-Outs." A Study supported in part by a Fund of the National Defense Education Act, Title V, Part A, PL 85-864 as Authorized by the Michigan State Plan (5.8) for participation in demonstration projects, 1961.

20. New York City Board of Education. **The New York City Talent Preservation Project.** Annual Report, June, 1959 a.

21. Peterson, John. "The Researcher and the Underachiever: Never the Twain Shall Meet." **Phi Delta Kappan**, May, 1963, Vol. XLIV, No. 8.